DISEASE-SPECIFIC STUDIES

CARDIOVASCULAR DISORDERS - Clinical Outcomes Studies

PCV1

ANGIOTENSIN RECEPTOR BLOCKERS AND THE RISK OF MYOCARDIAL INFARCTION: NETWORK META-ANALYSIS AND PROBABILITY RANKING

Mazumder D, Arora A, Bhutani MK, Pathak P, Siddiqui MK
Heron Health Private Ltd., Chandigarh, India

OBJECTIVES: There is no head-to-head trial demonstrating the risk of myocardial infarction (MI) across angiotensin receptor blockers (ARBs). This review assessed the MI incidences associated with the use of ARBs through network meta-analyses of randomised controlled trials (RCTs). **METHODS:** Embase® and MEDLINE® were searched until June 2012 for RCTs assessing the safety of approved ARBs versus active control/placebo. Studies were included based on a pre-specified protocol. Data were extracted by two reviewers, with any discrepancy being reconciled by a third, independent reviewer. A network meta-analysis was conducted and probability-based rank (P of being best) was generated using WinBUGS®. Subgroup analyses by disease cohorts (hypertension, heart failure, and diabetes) were also performed. **RESULTS:** Of the 3099 studies, 33 RCTs enrolling 143,205 patients were included. Most studies reported data for up-titrated doses with continued background therapy. No significant differences were observed between ARBs and controls in meta-analysis (relative risk [95% confidence interval]: 1.04 [0.99-1.10] vs. active-control; 0.94 [0.83-1.07] vs. placebo). Network meta-analyses indicated no significant difference among the ARBs. Subgroup analyses by disease cohorts showed no significant difference between ARBs and active/placebo as well as within ARBs. The probability of least MI incidence was highest with olmesartan 40 mg (P=41%) followed by candesartan 16 mg (P=19%), losartan 200 mg (P=10%), valsartan 80 mg (P=9%), and candesartan 4 mg-8 mg (P=4%-5%). Conversely, the probability of least MI incidence was <1% with telmisartan 80 mg, irbesartan 300 mg, losartan 100 mg, valsartan 160 mg. A dose-risk assessment within ARBs remained inconclusive due to limited data. **CONCLUSIONS:** ARBs did not differ significantly from active control/placebo or from each other for the risk of MI. However, per probability-based ranking, olmesartan 40 mg may present the least risk of MI. Limited data warranted careful interpretation of these results and further research in this area using monotherapy data.

PCV2

COMPARATIVE EFFICACY AND SAFETY ANALYSIS OF ATRIAL FIBRILLAION PATIENTS TREATED WITH DABIGATRAN IN RE-LY STUDY (CHADS 2 SCORE OF 3 OR GREATER) VERSUS RIVAROXABAN IN ROCKET-AF

Rasty S[1], Soliman W[2], Taheri R[3]
[1]*Roosevelt University, Buffalo Grove, IL, USA,* [2]*Consultant, Fort lee, NJ, USA,* [3]*West Coast University, Los Angeles, CA, USA*

OBJECTIVES: In this analysis we performed comparative efficacy and safety analysis of atrial fibrillation (AF) patients treated in RE-LY trial with ChadS2 score of 3 or greater treated with Dabigatran (Dab) 150mg versus AF patients treated with Rivaroxaban (Riv) in ROCKET-AF study (Avg Chads2 score=3.48). **METHODS:** Patient's baseline information and primary efficacy and safety outcomes data for both cohorts were compared. WINPEPI (2011, version 11.15) epidemiological tool was used to compare the event rates (safety and efficacy) per 100 patient year (100PY). **RESULTS:** Both groups were similar in age (73y), and consisted of roughly 40% females. The average SBP and DBP were 130/80 vs 130.9 /76.3 mmHg in Riv vs Dab patients. 82.5% of Riv compared to 69.8% of Dab had persistent AF. In Rocket –AF the average Chads2 score was 3.38 +/− 0.94 with 87% of patients having score of >= 3. Prior ASA intake was 36.3% in Riv vs 42.5% of Dab. 54.9% of Riv vs 55.2% of Dab had previous Stroke/TIA/Systemic embolism. In Riv group 62.6%,92.3%, 40.4% and 16.6% had CHF, HTN, DM and MI compared to 48.3%, 91.5%,44.8% and 21.6% in the Dab patients. For the primary end point of stroke or systemic embolism 1.7 events in Riv vs 1.87 events in Dab occurred per 100PY (OR=0.91; 95%CI=0.62-1.32); for safety end point of major bleed (any) 3.6 events in Riv vs 4.85 events in Dab occurred per 100PY (OR=0.73; 95%CI 0.57-0.93) and for Intracranial hemorrhage (ICH) 0.5 events in Riv vs 0.52 events in Dab occurred per 100 PY (OR=1; 95% CI= 0.50-2.02). **CONCLUSIONS:** This analysis of the published data suggests similar efficacy for both agents when used in AF patients with higher risk for stroke (>=3), higher major bleeding risks with Dab and similar rates for ICH with both agents.

PCV3

PREVALENCE, ASSOCIATED COMORBIDITIES AND TREATMENT PATTERNS AMONG CHRONIC KIDNEY DISEASE PATIENTS: AN ANALYSIS USING UK GPRD DATA

Jick S[1], Hagberg KW[1], O'Donoghue D[2], Jameson K[3], Ambegaonkar BM[4]
[1]*Boston University School of Medicine, Lexington, MA, USA,* [2]*Salford Royal NHS Foundation Trust, Salford, UK,* [3]*MSD Ltd., Hoddesdon, UK,* [4]*Merck & Co. Inc., Whitehouse Station, NJ, USA*

OBJECTIVES: To estimate the prevalence of stage 3-5 chronic kidney disease (CKD) in 2010, evaluate the presence of comorbidities, and describe treatment among CKD patients. **METHODS:** Data for patients with prevalent or incident CKD in 2010 (age ≥ 10 years at CKD diagnosis) were extracted from the UK General Practice Research Database. Patients were identified using Read codes or eGFR values, and those with cancer, hemolytic anemia, or sickle cell disease were excluded. **RESULTS:** Among 3.16MM patients in GPRD, we identified 166,707 patients with incident or prevalent stage 3-5 CKD in 2010 (5.3% of population). The majority of patients were stage 3 (92.5%; stage 4 = 6.3%, stage 5 = 1.2%), female (62.1%) and, 92.6% were ≥ 60 years (92.6%; 99.9% were above 20 years). The most common comorbidities were hypertension (64.7%), cardiovascular disease (37.1%), hypercholesterolemia (25.2%), and diabetes (19.2%), each condition being significantly more prevalent than in the general population (16.2%, 8.4%, 9%, and 5.5%, respectively). With more advanced CKD, the presence of comorbidities increased: considering stage 3 to 5, the proportion of CKD patients with hypertension, CVD, hypercholesterolaemia and diabetes increased from 63.7% to 80%, 36.2% to 43.5%, 25.1% to 29.2%, and 18.4% to 33.1%, respectively. The proportion of CKD patients receiving antihypertensive treatment or lipid-modifying therapy (LMT) also increased as stage advanced: 76.5% in stage 3 to 79.8% in stage 5 were receiving antihypertensive drugs, and 51.7% to 57.7% LMT. Statins were the most commonly used LMT agent (> 89% for all these three stages). **CONCLUSIONS:** Stage 3 to 5 CKD affected 166,707 patients covered by GPRD in 2010 (prevalence rate = 5.3%); most had stage 3 CKD (92.5%). Diabetes, hypertension and cardiovascular disease became more common with more advanced CKD. Antihypertensives and LMTs have been prescribed for a little over 75% and 50% patients, respectively, regardless of their CKD stage.

PCV4

THE OPTIMAL INTERVAL OF FRAMINGHAM RISK SCORE TO DETECT CARDIOVASULAR DISEASE IN HEALTHY ADULTS: A LARGE COHORT STUDY IN JAPAN

Takahashi O[1], Ohde S[2], Deshpande GA[2], Fukui T[1]
[1]*St.Luke's International Hospital, Tokyo, Japan,* [2]*St.Luke's Life Science Institute, Tokyo, Japan*

OBJECTIVES: The Framingham risk score screening is an important tool to identify adults' 10-year risk of cardiovascular disease (CVD), but there are few studies regarding the appropriate monitoring interval for re-screening. We aimed to determine the optimal interval for rechecking the Framingham risk score for healthy adults in Japan. **METHODS:** This was a population-based, retrospective cohort study from 2005 to 2010 in Tokyo, Japan. In healthy adults with a Framingham risk score of ≤20%, no prior CVD, and taking no hypertension or hyperlipidemia medications at baseline, we calculated the Framingham risk score annually for 4 years. We estimated the optimal interval of screening when the cumulative incidence of CVD or >20% of Framingham risk scores surpassed 10%. **RESULTS:** At baseline, 13,758 individuals (53% female) with a mean age of 48 years old (SD: 10 years, range: 30 to 73), had a mean total cholesterol level of 204 mg/dl (SD: 33 mg/dl), and mean systolic blood pressure of 116 mmHg (SD: 16 mmHg). The prevalence of diabetes mellitus at baseline was 1.9%. The mean baseline Framingham risk score was 5.3% (range: 0.3 – 19%). For those with baseline Framingham risk scores of < 10 %, 10 – 15%, and > 15%, cumulative incidences were 0.2%, 1.6%, and 16.8% at 1 year and 0.8%, 11.5%, and 43.6% at 3 years, respectively. **CONCLUSIONS:** In those with Framingham risk scores <20% at baseline, the optimal interval for re-screening should be more than 3 years for those with risk scores <10%, 2 years for those with risk scores of 10-15%, and yearly for those with baseline scores of >15 %.

PCV5

COMPARISON OF ATRIAL MEASUREMENTS AND ESTIMATIONS OF TRANSMITRAL REGURGITATION USING THREE-DIMENSIONAL AND CONVENTIONAL ECHOCARDIOGRAPHY IN DOGS

Poulsen Nautrup B[1], Schultheiss S[2], Poulsen Nautrup C[2]
[1]*EAH Consulting, Juelich, Germany,* [2]*Ludwig-Maximilians-University Munich, Munich, Germany*

OBJECTIVES: Cardiac volume measurements using three-dimensional echocardiography (3DE) have shown to deliver comparable results to magnetic resonance imaging (MRI). In a previous investigation, volume measurements of the canine left ventricle using 3DE was compared to conventional volume calculations by two-dimensional echocardiography (2DE) and M-Mode, revealing increasingly deviating results with conventional methods in the mentioned sequence. The aim of this study was to compare measurements of the left atrium and estimations of transmitral regurgitation using 3DE and 2DE in unsedated dogs. **METHODS:** Measurements of the left atrium were performed in 42 healthy dogs (beagles and dachshunds), using conventional linear, planimetric and volume calculations with 2DE, and volume measurements with 3DE. Agreement between methods was analyzed using Spearman's rank correlation, intraclass correlation coefficient, and Bland-Altman plot. Additionally, 20 dogs suffering from mitral valve insufficiency (CHIEF grades C2 and C3) were recruited for the estimation of transmitral regurgitation, which was approximated from 2 or 3 planes using 2DE (conventional approach), and from a live x-plane image using 3DE. **RESULTS:** Compared to 3DE semi-automatic volume measurements of the left atrium, volume calculations performed with 2DE (methods of discs, Simpson's rule) underestimated volumes with deviations being predictable for the respective dog sizes; whereas conventional linear and planimetric measurements allowed the most rapid investigation, but results deviated in some dogs unpredictably from those obtained with 3DE. Estimating the transmitral regurgitation using conventional 2DE was time-consuming and required replacements of the dogs during investigation, lowering compliance in the canine cardiac patients, whereas 3DE allowed accurate and more rapid evaluations without the necessity of replacing the dogs. **CONCLUSIONS:** Volume measurements of the left atrium are most accurate using 3DE. Additionally 3DE facilitates the estimation of transmitral regurgitation in dogs, increasing compliance with the investigation. However, further clinical and economic evaluations are needed in veterinary cardiology.

PCV6

COMPARISON RIVAROXABAN WITH OTHER ANTITHROMBOTIC AGENTS: EFFECTIVENESS AND SAFETY OF PROPHYLACTIC ANTITHROMBOTIC AGENTS AFTER MAJOR ORTHOPEDIC SURGERIES IN TAIWAN

Chang WY[1], Hsu HC[2], Wu CH[2], Chen PS[2], Wu MT[1]
[1]*Wan Fang Hospital, Taipei Medical University, Taipei, Taiwan,* [2]*Taipei Medical University, Taipei, Taiwan*

OBJECTIVES: To evaluate the current utilization, effectiveness, and safety of antithrombotics for preventing deep vein thrombosis (DVT) after major orthopedic